

The National Guide for Sample Collection and Preservation: Strengthening Reliable Environmental Data Quality in Brazil

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CETESB**



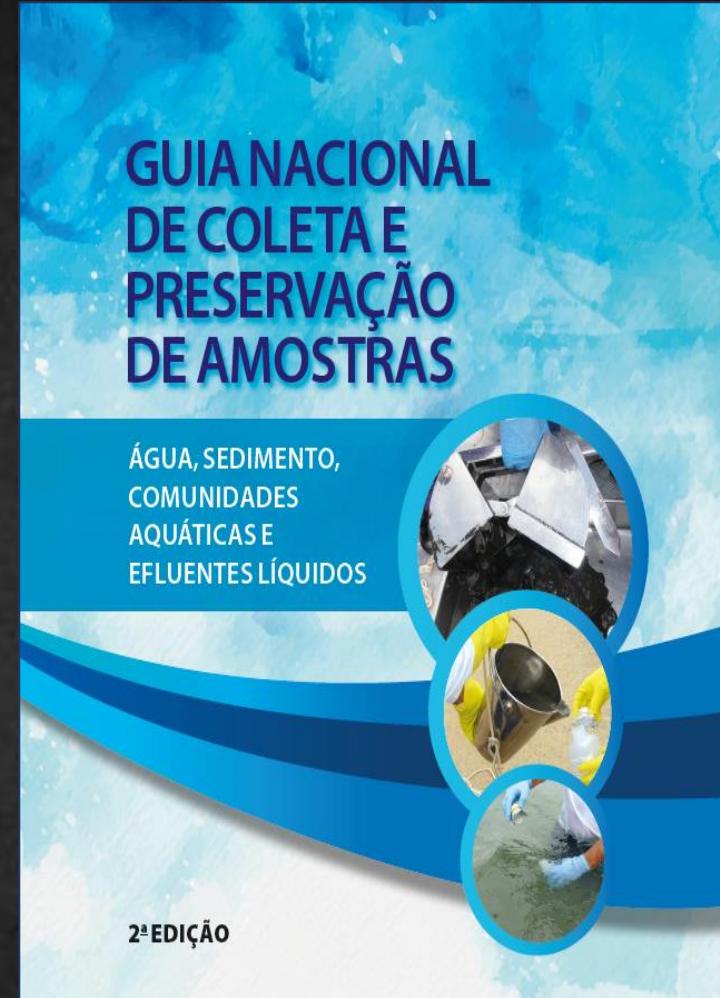
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Agenda

- 1. Context & Need
- 2. Objectives
- 3. Timeline
- 4. Guide Structure & Chapters
- 5. Training & Adoption
- 6. Impacts & Expected Results
- 7. Future Challenges
- 8. Conclusions.



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Context & Need

ANA: Federal Autarchy
Implements National Water Resources Policy

- Challenges in Water Resources Management
- Pioneering Initiatives
 - NHN – National Hydrometeorological Network
 - NWQAP – National Water Quality Assessment Program
 - WQNT – Water Quality National Network)
- Emergence of the Guide: A response to a critical demand



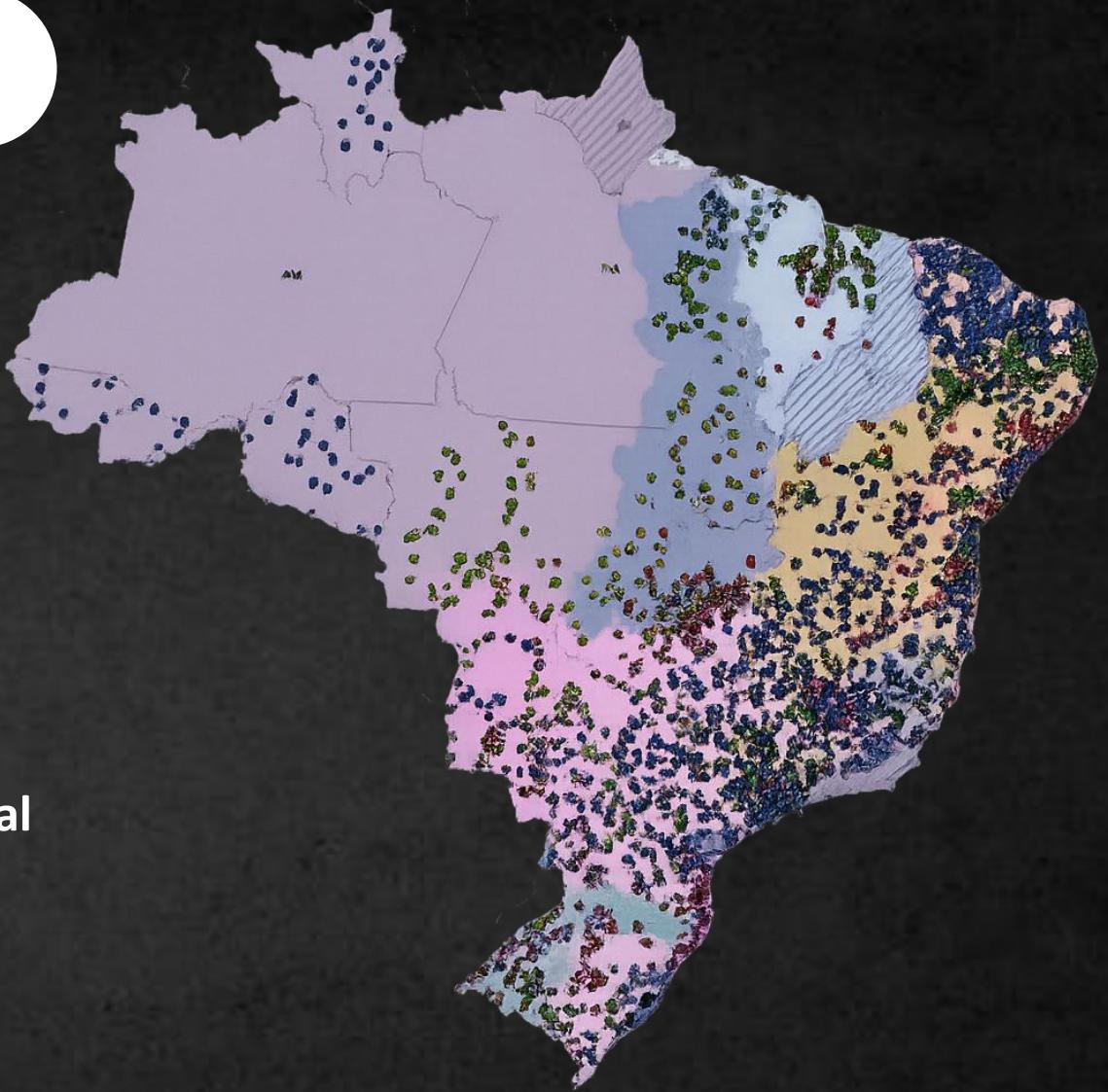
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Context & Need

NWQAP – National Water Quality Assessment Program Standardized Water-Quality Data

- **3802 points**
- **Core assays**
Water temperature, dissolved oxygen, pH, conductivity, turbidity, total solids, BOD, total nitrogen, total phosphorus and E. coli.



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Context & Need

CETESB: Environmental Company of the State of São Paulo

- **Founded in 1968 as São Paulo's environmental agency**
- **Regulates & licenses emissions, effluents and waste**
- **Conducts inspections and enforces environmental standards**
- **Monitors air, water and soil quality statewide**



CETESB



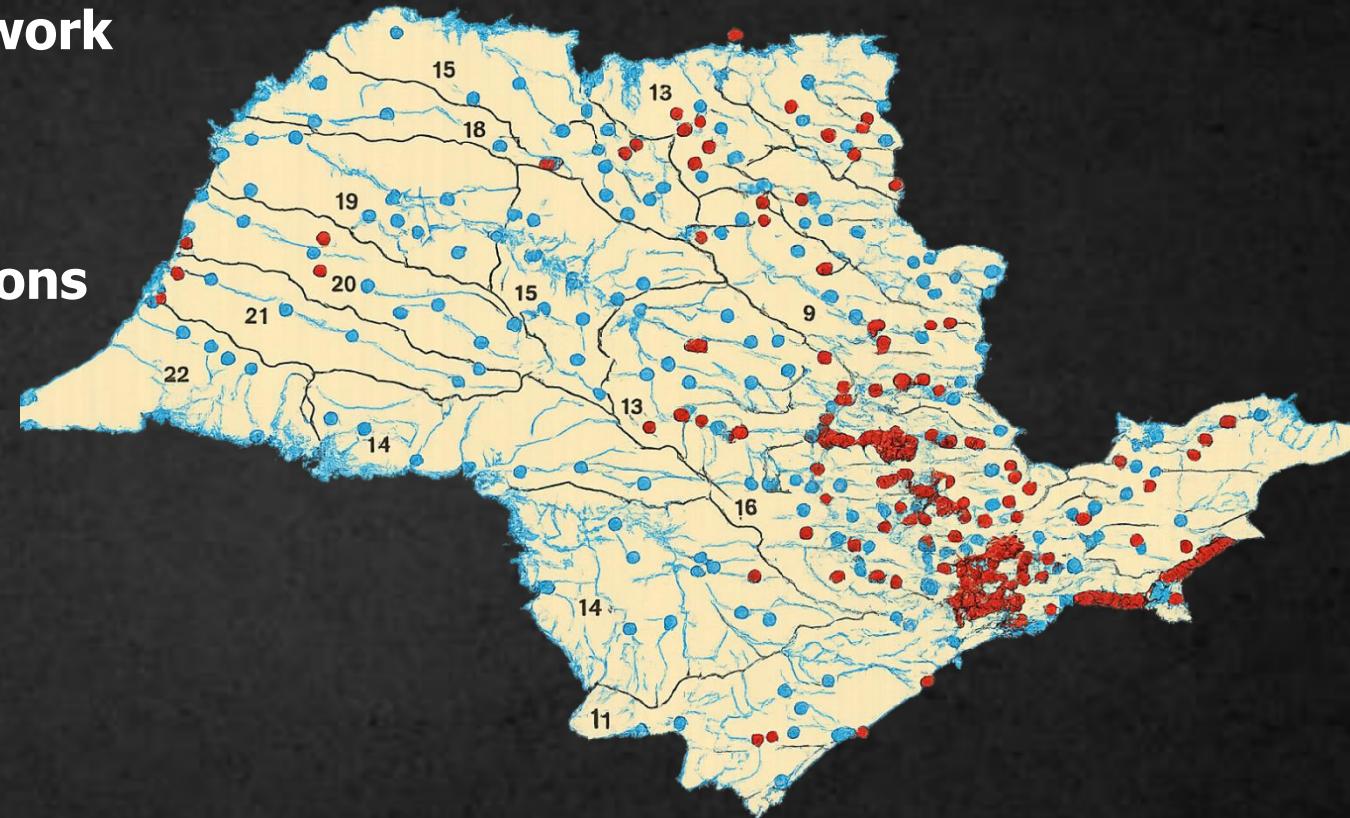
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Context & Need

Surface Water Monitoring Network

- **Start: 1974**
- **Number of Stations: 549 stations**
- **Frequency: Quarterly**



Context & Need

Laboratory & Sampling Excellence

- **Central analytical complex in São Paulo + 7 regional labs**
- **Matrices: surface water, groundwater, sediment, biota and effluents**
- **Dedicated Sampling Division for field collection**
- **Decades of high-quality data generation**



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Objectives

- Standardize Sampling Methods
- Ensure Data Quality
- Harmonize Procedures
- Support Regulatory Needs
- Facilitate Capacity Building
- Continuous Update



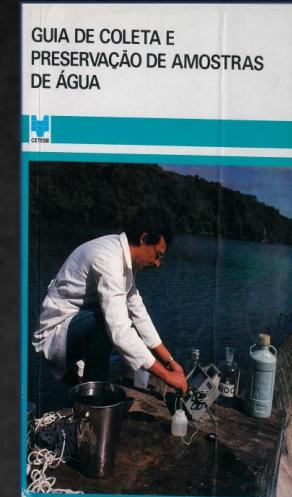
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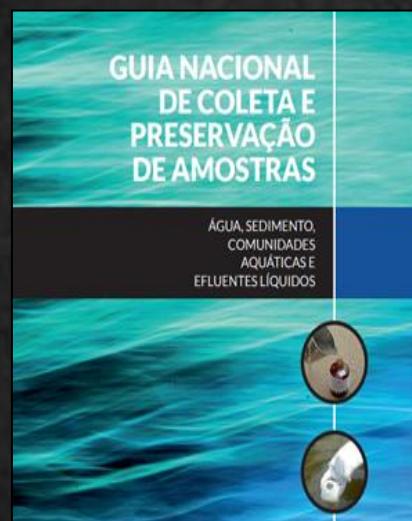
Timeline



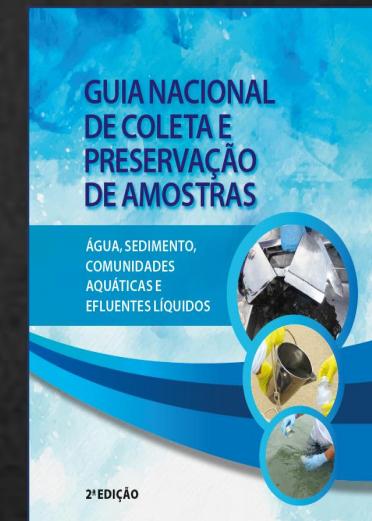
1977



1988



2011



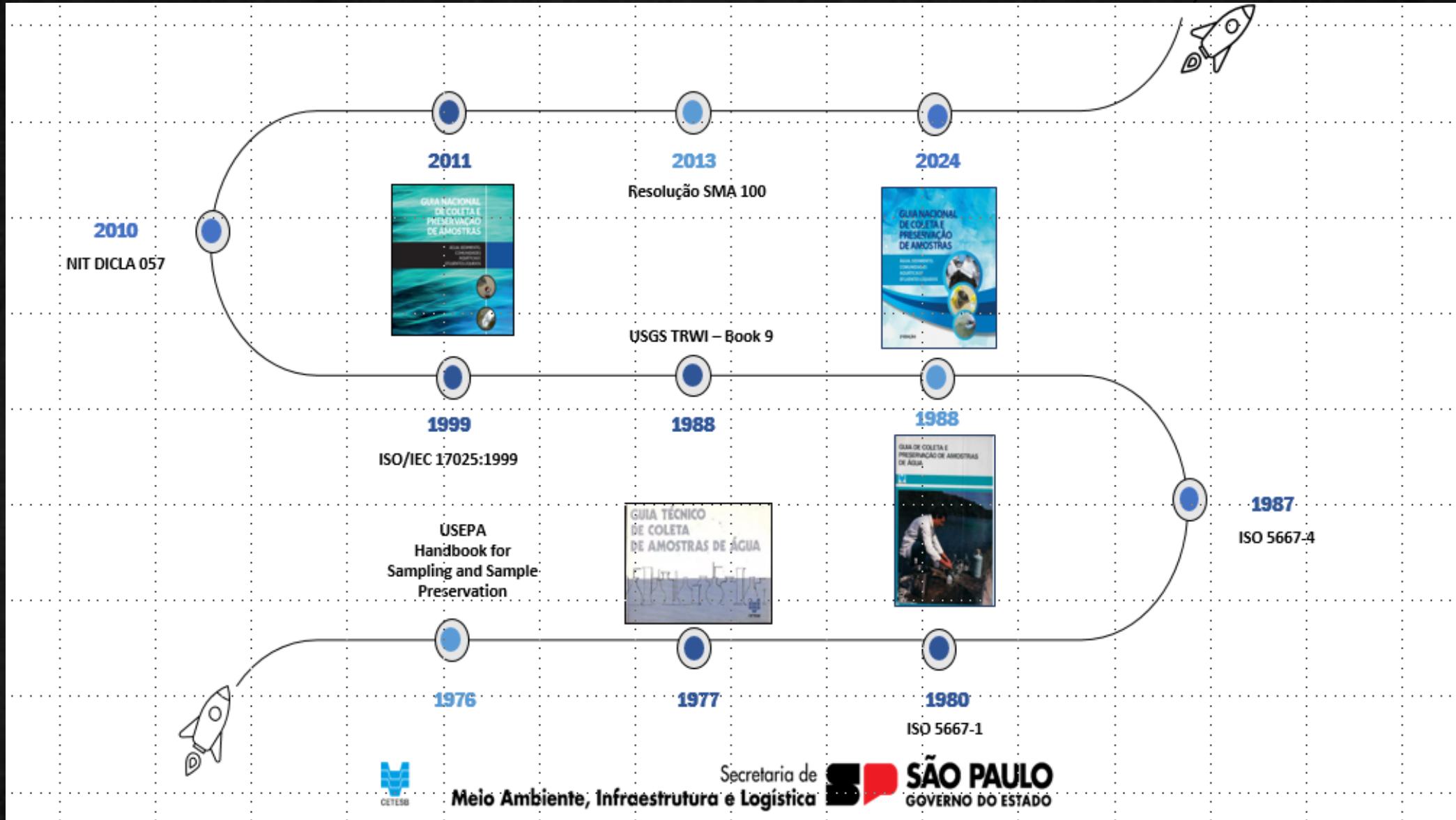
2024

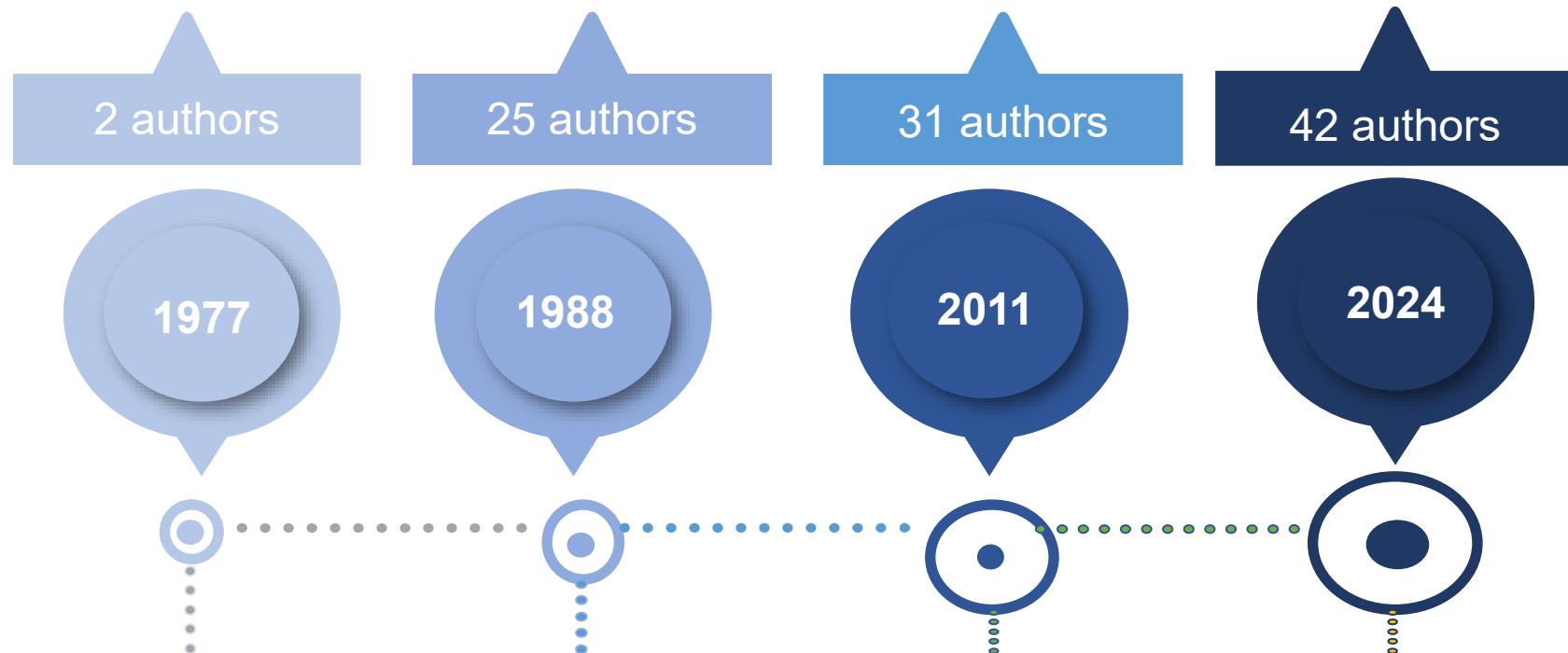


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Timeline





Water
Chemical,
microbiological
and biological
tests

Water and Sediment
Sampling planning,
collection equipment, flow
measurement

**Water, Sediment and
Wastewater**
National reference,
quality control and field
tests

**Water, Sediment and
Wastewater**



Guide Structure and Chapters

1. Introduction

2. Sampling Program & Planning

3. Fieldwork Planning & Organization

4. Field Sampling Quality Control

5. Sampling Equipment

6. Surface Water, Sediment & Liquid Effluent Sampling

7. Groundwater & Treated Water Sampling

8. In-Field Assays & Automatic Monitoring

9. Flow Measurement Methods



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Training and Adoption

- ANA's Role
- Professional Training
- Proficiency Testing Programs (PTP)
- Wide Adoption and National Recognition.
- ANA Resolutions 903/2013 & 207/2024



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Impacts and Results

- National Data Harmonization
- Expansion of Monitoring Coverage
- Improvement in Data Quality
- Support for Public Policies and Decision-Making
- More than 150,000 high-quality measurements generated annually!
- Recognized in **NIT-DICLA-057** (Brazilian normative document for sampling accreditation).



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Future Challenges

- Maintain Engagement and Organizational Structure
- Expand the Scope
- Quality Control Criteria
- Emerging Contaminants (PFAS, microplastics)
- Passive Sampling



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Conclusion

- Collaborative Success (ANA–CETESB)
- Key National Reference
- Strengthening of Environmental Management
- Commitment to Continuous Improvement



Coordinating Team



Thank you!

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